

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000969**Date Inspected:** 01-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 730**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Orthotropic Box Girders (OBG).

Bay 3 OBG:

The QA Inspector randomly observed ZPMC personnel utilizing magnetic drills to drill bolt holes in the flanges of T-Ribs.

Bay 7 OBG:

The QA Inspector randomly observed ZPMC welder Wang Min ID Number 048296, utilizing the Submerged Arc Welding (SAW) Process with approved ZPMC Weld Procedure Specification (WPS) WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on Weld Joint (WJ) FB021-02-080 joining SPMC Floor Beam Sections X30-X30A T=18mm A709M-345F2) to X29-X29A (T=18mm A709M-345F2). The QA Inspector observed ZPMC CWI Li Zhijiang monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 543 amps, welding voltage 31 volts with a travel speed of 440 millimeters per minute. Weld parameters appeared to comply with the above approved ZPMC WPS. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder Jin Rong ID Number 066471, utilizing the Shielded Metal Arc Welding (SMAW) Process with approved ZPMC WPS WPS-B-P-2211-B-U2-FCM in the 1G position to tack

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weld Floor Beam Section X14-X14A (T=12mm A709M-345T2) to Floor Beam Section X46-X46A (T=30 A709M-345F2) at WJ FB007-01-021. The QA Inspector observed ZPMC CWI Cui Yi Ru monitoring weld parameters. Weld parameters appeared to comply with the above approved ZPMC WPS.

The QA Inspector was requested by a Bureau Veritas Representative, to verify the removal of 3 millimeters (mm) deep X 75mm long, of base metal from the adjacent edges of the Heat Affected Zone (HAZ) in the adjoining Floor Beam sections of WJ's FB026-01-080 and FB036-02-080, to allow for the repair of the base metal in the HAZ. The QA Inspector randomly observed that there had only been approximately 2mm of base metal removed in the center of the 75mm length, but tapered off to less than 1mm at the beginning and ends of the 75mm excavations. The QA Inspector then observed a ZPMC helper utilizing a grinder to remove more base metal from the affected areas and was again requested to verify that the excavations were 3mm X 75mm. The QA Inspector randomly verified the dimensions of the excavations. The QA Inspector randomly observed ZPMC welder Wang Changfa begin SMAW base metal weld repairs to the above mentioned excavations. The attached photographs provide additional detail.

The QA Inspector randomly observed ZPMC welder Jin Chengmao ID Number 058551, utilizing the Flux Cored Arc Welding (FCAW) Process with approved ZPMC WPS WPS-B-T-2231-B-U2-F-1 in the 1G position to weld the root pass in Floor Beam Section X18-X1A (T=18mm A709M-345F2) to Floor Beam Section X12-X12E (T=18mm A709M-345F2) at WJ FB018-02-080. The QA Inspector observed ZPMC CWI Li Zhijiang monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 296 amps, welding voltage 28.2 volts with a travel speed of 495 millimeters per minute. Weld parameters appeared to comply with the above approved ZPMC WPS.

The QA Inspector randomly observed ZPMC welder Wang Min ID Number 048296, utilizing the Submerged Arc Welding (SAW) Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the IG position to weld the fill and cover passes on WJ FB018-01-080 joining SPMC Floor Beam Sections X18-X18A (T=18mm A709M-345F2) to X12-X12Z (T=18mm A709M-345F2). The QA Inspector observed ZPMC CWI Li Zhijiang monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 535 amps, welding voltage 31 volts with a travel speed of 440mm per minute. Weld parameters appeared to comply with the above approved ZPMC WPS.

The QA Inspector randomly observed ZPMC welder Huang Xin Lan ID Number 044780, utilizing the Submerged Arc Welding (SAW) Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the IG position to weld the fill and cover passes on WJ FB017-02-080. The QA Inspector observed ZPMC CWI Cui Yi Ru monitoring weld parameters. Weld parameters appeared to comply with the above approved ZPMC WPS. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder Chen Chuan Zong ID Number 044824, utilizing the Flux Cored Arc Welding (FCAW) Process with approved ZPMC WPS WPS-B-T-2231-B-U2-F-1 in the 1G position to weld the root pass in Floor Beam Section X46-X46-4A (T=12mm A709M-345T2) to Floor Beam Section X46-X46D (T=30mm A709M-345T2) at WJ FB018-02-080. The QA Inspector observed ZPMC CWI Li Zhijiang monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 269 amps, welding voltage 28.3 volts with a travel speed of 482

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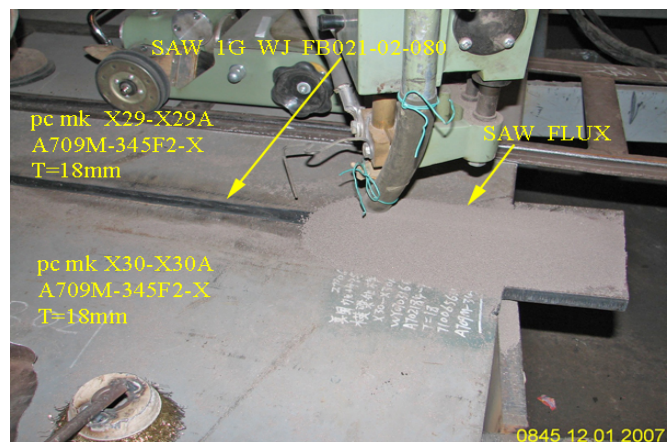
millimeters per minute. Weld parameters appeared to comply with the above approved ZPMC WPS.

The QA Inspector randomly observed ZPMC welder Wang Min ID Number 048296, utilizing the Submerged Arc Welding (SAW) Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on WJ FB008-04-026. The QA Inspector observed ZPMC CWI Li Zhijiang monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 533 amps, welding voltage 31 volts with a travel speed of 430mm per minute. Weld parameters appeared to comply with the above approved ZPMC WPS.

The QA Inspector randomly observed ZPMC welder Chen Chuan Zong ID Number 044824, utilizing the Flux Cored Arc Welding (FCAW) Process with approved ZPMC WPS WPS-B-T-2231-B-U2-F-1 in the 1G position to weld the root pass in Floor Beam Section X17-Xa-4A (T=18mm A709M-345F2) to Floor Beam Section X12-X12B (T=18mm A709M-345F2) at WJ FB025-02-021. The QA Inspector observed ZPMC CWI Li Zhijiang monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 278 amps, welding voltage 28 volts. Weld parameters appeared to comply with the above approved ZPMC WPS.

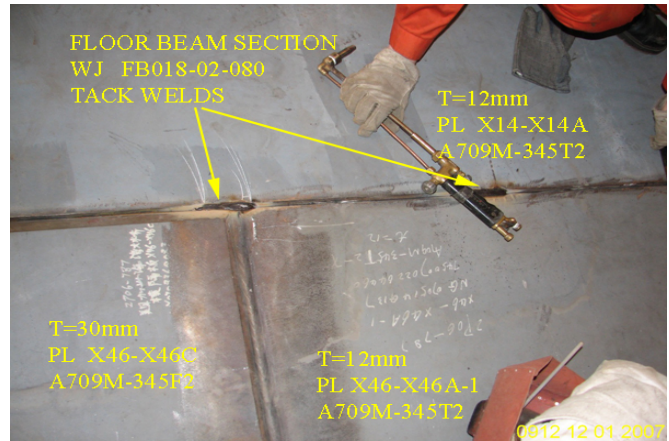
The QA Inspector randomly observed ZPMC welder Wang Min ID Number 048296, utilizing the Submerged Arc Welding (SAW) Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on WJ's FB015-04-026, FB002-04-026 and FB007-04-026 . The QA Inspector observed ZPMC CWI Li Zhijiang monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters on WJFB002-04-026 and documented them as follows: welding amperage 543 amps, welding voltage 31 volts with a travel speed of 440 millimeters per minute. Weld parameters appeared to comply with the above approved ZPMC WPS.

The QA Inspector randomly observed ZPMC welder Huang Xin Lan ID Number 044780, utilizing the SAW Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on WJ FB016-02-021. The QA Inspector observed ZPMC CWI Cui Yi Ru monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters on WJFB002-04-026 and documented them as follows: welding amperage 541 amps, welding voltage 30.6 volts. Weld parameters appeared to comply with the above approved ZPMC WPS. The attached photograph provides additional detail.



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Summary of Conversations:

There were no relevant conversations.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Franco,Charlie

Quality Assurance Inspector

Reviewed By: Cochran,Jim

QA Reviewer